

ed and 8 of them went into the water to pull the sambar out. It was still alive but expired when it reached the bank. It was now 5.30 and we had watched this drama for 15 minutes. The sambar was a beautiful, well-built animal in its prime with a lovely winter coat, in perfect condition and weighing about 300 lbs. the antlers being approximately 18 in. On examining the body we found that it had been shot through the left jaw—the bullet going through the tongue and coming out of the right jaw. The jaw was completely broken and the animal must have been in great pain. The wound was quite fresh. Lieut. Eaton had arrived and came down to see the animal while the woodcutters were cutting it up. There is no doubt that the animal, suffering extreme pain and unable to eat or drink, had come down to the river and deliberately taken its own life.

H. S. CROWLEY,

ROORKEE, U.P.

*Captain.*

31st December, 1944.

*K.G.V.O.'s Bengal Sappers & Miners.*

[The motive of suicide must be ruled out. No animal, except Man, not even the higher apes, is conscious of or able to recognize the state of death; as such, no animal can deliberately choose death as a means of escape from pain and other adverse circumstances. For the same reason it is incorrect to describe the instinctive behaviour manifested by hyaenas, opossums and other animals as 'shamming dead'. In the present instance the sambar was probably driven to the river by thirst. Its repeated plungings of its head into the water were probably vain efforts to drink. Death would have ensued with or without drowning from shock and exhaustion from its wounds.—Eds.]

#### 6.—BREEDING HABITS OF SWAMP DEER (*RUCERVUS DUVAUCELLI*) IN ASSAM.

The Society seeks information relative to time of horn growth and development and the breeding season of Swamp Deer in Assam.

In a letter to the *Field* dated 23rd September 1944, His Grace the Duke of Bedford questions a statement made by Lt.-Col. C. H. Stockley that, in Assam, swamp deer rut when the stags are in velvet. As evidence, Col. Stockley (*Field*, 20th January 1945) quotes in full a note by Mr. C. A. R. Bhadian, 'On Swamp Deer in Assam', published in the Society's *Journal* (vol. xxxvii, p. 485). Mr. Bhadian says that in Assam, stags commence to grow their new antlers in April and May, and growth in velvet is completed in July-August. Velvet is shed and the antlers are hard from August to February, and in the instance of antlers which have matured in August—from September to March.

As regards the time of the rut, Mr. Bhadian says that this takes place between April and May 'when the male is practically without antlers'.

Mr. Bhadian's statement as regards the time when stags shed their horns in Assam, and the period of their growth and development is at variance with the observations of other writers. Capt.

D. Moncrieff Wright, writing in our *Journal* (vol. xxxiv, p. 236), says that in Assam he saw 'stags with horns fully grown in velvet and in process of shedding their velvet in April'. This would imply that the period of horn growth in velvet is between December and April (growth to maturity takes approximately 5 months, vide Bhadian, *loc. cit.*, and Dunbar Brander, *Wild Animals in Central India*, p. 200 (U.P. & C.P.)). The period when the horns are hard would be between May and November. Capt. Moncrieff Wright's statement is supported by Lydekker (Royal Natural History) who says that 'single stags are met with on the plains of Assam during March with antlers in velvet.' Blandford (Mammalia) says that 'at the end of March in Assam bucks are found in grass singly with horns for the most part partly grown in velvet'. Swamp deer stags, like many other deer, live singly during the time of horn growth, and assemble in herds after the horns have hardened; such assemblage being preliminary to the development of the rut. The evidence of these writers indicate that in Assam horn growth of many stags is completed in April and May, when according to Mr. Bhadian the rut takes place.

In Mr. Bhadian's view there is no linkage between horn growth and the development of the rut. This is not the case with Swamp Deer in the C.P. and the U.P. Dunbar Brander writing of Swamp Deer in these provinces (*Wild Animals in Central India*, p. 200) says that the horns begin to grow shortly before the commencement of the rains (June), the period of horn growth and development is between July and October. The stags congregate in November and the rut does not develop till December reaching its climax between mid-December and January.

We should be glad to have further evidence on the following points relative to Swamp Deer in Assam:—

- (1) Time of horn shedding. It should be noted that the time when antlers are cast is not uniform for all stags. Adult stags shed their horns earlier than younger animals.
- (2) Period of horn growth in velvet.
- (3) Period during which the antlers are hard.
- (4) Time when the majority of stags rut.
- (5) Time when the majority of young are born.

BOMBAY NAT. HIST. SOCIETY.

S. H. PRATER,

15th April 1945.

Curator.

#### 7.—CANINE TEETH IN CHITAL (*AXIS AXIS*).

With reference to Mr. Nolthenius's note on the canine teeth in chital stags (Vol. 45, No. 1, p. 83), I should like to say that after examining a number of chital and sambar for these 'tushes' I have only found them in a very rudimentary form and then only in older beasts.

In Europe it is possible to estimate the age of a stag both from the colour and size of these tushes. In young beasts they are pure white and small in size. A fourth year stag has the centre of the tush a pale golden brown. This patch of colour darkens and grows larger with age.